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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/581,576	06/02/2006	Mi Rim Jin	DI-011	6982

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KIRK HAHN
14431 HOLT AVE
SANTA ANA, CA 92705

EXAMINER	
BETTON, TIMOTHY E	

ART UNIT	PAPER NUMBER
1617	

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02/20/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/581,576	JIN ET AL.	
	Examiner	Art Unit	
	Timothy E. Betton	1617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 August 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Applicants' Remarks filed 20 August 2007 have been duly acknowledged and made of record. The comments presented by applicants are essentially drawn to 112, First Paragraph rejection as being non-enabled by the specification.

Applicants' comments are acknowledged and have been reconsidered.

Rejections and/or objections not reiterated from previous office actions are hereby withdrawn. The following rejections and/or objections are either reiterated or newly applied. They constitute the complete set presently being applied to the instant invention.

Objection

The claims are objected to as disclosing an incorrect drawing of the structure of dehydrodiconiferyl alcohol. The structure in the instant claims lack a methoxy group. See the experimental examples in the specification (pgs. 12-16).

Claim Rejections - 35 USC § 102

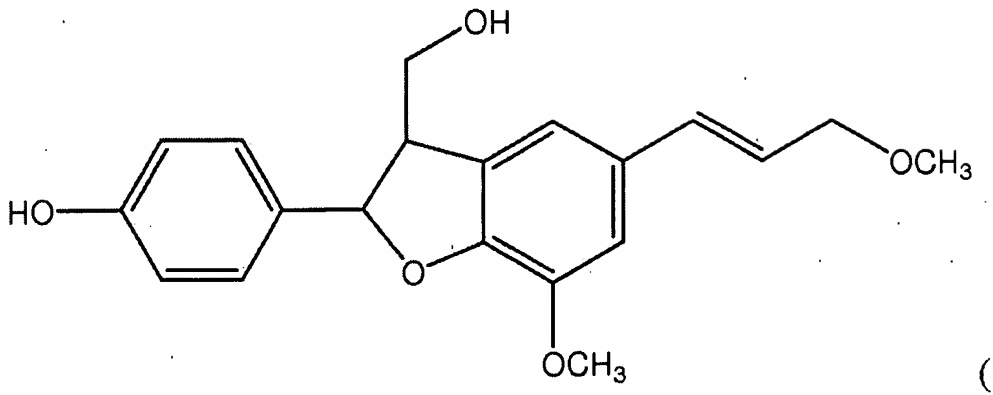
The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Akira et al (JP 03120217).

Akira et al teach an intended use for core moiety:



(1a)

which anticipates instant claims 1-4 which disclose a pharmaceutical composition comprising dehydrodiconiferyl alcohol (See Abstract). The chemical structure had an indicated intended use for treatment prior to the claims of instant invention.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any

evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akira et al (JP 03120217) and Akira et al. (JP 03074378) in view of Obukowitz (USPGPUB 20040003432 A1).

Akira et al. ('278) is again reapplied for the reasons already made of record *supra.*

Akira et al. ('378) teach a composition comprising as an active ingredient a dihydrobenzofuran derivative, useful for treatment or prophylaxis of digestive diseases such as reflux esophagitis, gastric ulcer, duodenum ulcer or gastritis (abstract only).

Akira et al. ('278) and ('378) do not teach health foods or beverages comprising dehydrodiconiferyl alcohol with a sitologically acceptable additive for the alleviation of obesity and adipogenesis-involved diseases.

However, Obukowitz teaches a method of producing a hexosamine comprises providing a cell having genes encoding each enzyme required for a biosynthetic pathway capable of synthesizing the hexosamine where at least one gene in the pathway is a heterologous gene. Compositions and methods of producing transgenic cells, expression vectors, transgenic plants, and nutritional material that contain hexosamines are also provided, as are methods for preventing, treating, and inhibiting arthritis and articular-joint damage or disease in subjects in need of such prevention, treatment and/or inhibition (abstract only).

Obukowitz teaches plants which are suitable for the practice of the present invention include any gymnosperm, dicotyledon and monocotyledon. Preferred plants are those which are edible in part or in whole by a human or an animal. Edible plants that may be useful in the present invention are not particularly limited and may be gymnosperms, monocots and dicots. Such plants include cereals (wheat, barley, rye, oats, rice, sorghum, related crops, etc.), beet, pear-like fruits, stone fruits, and soft fruits (apple, pear, plum, peach, Japanese apricot, prune, almond, cherry, strawberry, raspberry, black berry, tomato, pepper, etc.), legumes (kidney bean, lentil, pea, soybean), oil plants (rape, canola, mustard, poppy, olive, sunflower, coconut, castor, cocoa bean, peanut, soybean, corn, etc.), **Cucurbitaceae** (*pumpkin*, cucumber, melon, etc.), citrus (orange, lemon, grape fruit, mandarin, Watson pomelo (citrus natsudaidai), etc.), vegetables (lettuce, cabbage, celery cabbage, Chinese radish, carrot, onion, potato, etc.), camphor trees (avocado, cinnamon, camphor, etc.), corn, tobacco, nuts, coffee, sugar cane, tea, grapevine, hop and banana (paragraph 107).

Obukowitz teaches methods of prevention, the subject is any human or animal subject, and preferably is a subject that is in need of prevention and/or treatment of pain, inflammation and/or an inflammation-related disorder. The subject may be a human subject who is at risk for pain and/or inflammation, or for obtaining an inflammation-related disorder, such as those described above. The subject may be at risk due to genetic predisposition, sedentary lifestyle, diet, exposure to disorder-causing agents, exposure to pathogenic agents, **obesity**, excessive joint use or damage (e.g., such as by certain athletes), and the like (paragraph 158).

The present invention also includes a **food or beverage** comprising a transgenic plant, or a part, extract or product thereof that contains a polynucleotide of the invention. In other

embodiments, hexosamine-containing products derived from the transgenic plant may be free of such polynucleotides. These transgenic plants, especially those transgenic plants which produce hexosamines by virtue of the presence of the polynucleotide or polynucleotides, may constitute the food itself or they may be processed to form the food or beverage. For example, a tuber of a transgenic potato of the invention constitutes a food of this aspect of the invention. Alternatively, such a transgenic potato may be processed into another foodstuff (paragraph 33).

Accordingly, instant claim 1 cites a limitation drawn to the term 'isolated' on line 2. specifically, instant claims 1-4 read on pure dehydrodiconiferyl alcohol compounds, and any composition comprising the same. The term "isolated" merely defines the process of making the composition. Further, the product by process does not limit the final product insofar as the final products are the same. Additionally, the intended use of a product carries very little weight to the product claim. This term suggests a product by process limitation. In other words, this particular moiety was isolated from the extract of a Cucurbitaceae family plant. However, according to the instant claim 5, this particular alcohol can be comprised within a health care food. Instant claim 1 also reads on the same limitation. In light of the above, the skilled artisan would instantly recognize that food stuff/ products could comprise a specific combination of ingredients, including the cucurbitaceae extract and ultimately be expected to achieve or accomplish the inventive objective of the claimed invention. Specifically, the skilled artisan would be inclined to consider a pumpkin pie and pumpkin juice in view of the instant claims, which could readily be designated to have the prescribed percentage of a dehydrodiconiferyl alcohol component. It is noted that the inventor isolated the compound from the stem and leaf of a pumpkin. However, the disclosure of instant claim 1 is not limited to the leaf or the stem of a pumpkin. Apparently,

the applicant expects the compound to be found in any part of the plant. Although, it is very common that a compound that you may find in one part of a plant may not be necessarily present in another part or component of the plant.

Thus, it is reasonable to expect pumpkin fruit to contain the compound. In view of this, the applicant must show that pumpkin pie or pumpkin juice does not contain any or a negligible amount of the compound. The examples *supra* drawn to pumpkin pie and pumpkin juice, though elementary, still capture the essential obviousness over the claimed invention.

Thus, it would have been *prima facie* obvious at the time of the claimed invention that the skilled artisan would have at once recognized a reasonable expectation of success via the teachings of Akira et al. and Akira et al. with the teachings and methods of Obukowitz. Particularly, Obukowitz teaches plants which are suitable for the practice of the present invention. Cucurbitaceae (pumpkin) is listed. Obukowitz further suggests a treatment for obesity, based on the list of which Cucurbitaceae is disclosed. The reference suggests that any one component within the group whether indicated for combination therapy or monotherapy, could be positively indicated as a treatment for adipocyte activity (obesity). The motivation to incorporate together with the Akira et al. reference would have been apparent to the skilled artisan based on the disclosure of an intended use for the same core moiety of a dihydrodiconiferyl alcohol with the teachings and modifications of Obukowitz makes the instant claims obvious in view of the scope of the claimed invention.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy E. Betton whose telephone number is (571) 272-9922. The examiner can normally be reached on Monday-Friday 8:30a - 5:00p.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sreeni Padmanabhan can be reached on (571) 272-0629. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

S Wang

TEB

SHENGJUN WANG
PRIMARY EXAMINER